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EXAMINER				
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ART UNIT		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/582,829

**Applicant(s)**

SEABROOK, BILL

**Examiner**

JULIE A. SHALLENBERGER

**Art Unit**

2885

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 6/14/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 21-27, 29-32 and 34-38 is/are rejected.
- 7) ☐ Claim(s) 5, 6, 8-20, 28 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/14/06 & 7/24/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

Claim 28 and 33 are objected to because it is unclear how the fins can extend radially when they extend longitudinally in the preceding claim.

It is noted that figure 10 shows this type of configuration, however, the claim language does not clearly define the structure, which renders the claim confusing.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is indefinite because the use of a trademark or trade name used as a limitation to identify or describe a particular material or product, does not comply with the requirements of 35 U.S.C. 112 second paragraph. *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Usher (6,170,967).

Usher teaches a lighting assembly comprising a mounting 21 having a concave mounting surface and defining an indexing channel (figures 1 and 2); a seat 25 having a front and rear surface, said seat including an indexer 29 at the rear surface thereof, said indexer being received in said indexing channel; and a light source 14 attached to the front surface of said seat (col. 3 lines 7-43).

Claims 2, 3, and 7, are rejected under 35 U.S.C. 102(b) as being anticipated by Petroski (6,481,874).

Pertrowski teaches a lighting assembly, comprising a thermally conductive mounting 20 having a mounting surface; and a heat sink seat 22 having a front and rear surface, said heat sink seat being moveably mounted to said mounting surface, wherein the shape of said mounting surface corresponds to the shape of the rear surface of said heat sink seat (see figure 1), wherein the front surface of said heat sink seat is configured to receive a light emitting device 12 (col. 2 line 57-col.4 line 32).

In regard to claim 3, Petrowski teaches the light emitting device is a light emitting diode (LED) thermally coupled to the front surface of said heat sink seat.

In regard to claim 7, Petrowski teaches that the heat sink seat includes a front portion forming a wedge capable of angling said light emitting device (see figure 1).

Claim 2 is alternatively rejected under 35 U.S.C. 102(b) as being anticipated by Wang (2006/0034085).

In regard to claim 2, Wang teaches a thermally conductive mounting 2 having a mounting surface; and a heat sink seat 10 having a front and rear surface, said heat sink seat being moveably mounted to said mounting surface, wherein the shape of said mounting surface corresponds to the shape of the rear surface of said heat sink seat (see figure 1), wherein the front surface of said heat sink seat is configured to receive a light emitting device [0017-0020].

Comment [1]: this is b/c claim 24 is dep. on claim 2

Claim 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated Hamilton (5,763,951).

Hamilton teaches a heat sink, comprising a thermally conductive mounting 151 having a mounting surface; and a heat sink seat 164/166 having a front and rear surface, said heat sink seat being moveably mounted to said mounting surface (col. 5 lines 12-18).

In regard to claim 22, Hamilton teaches the shape of said mounting surface corresponds to the shape of the rear surface of said heat sink seat (see figure 4).

In regard to claim 23, Hamilton teaches the mounting further includes a plurality of fins 166 extending longitudinally and outwardly from a rear surface of the mounting.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Noh (2006/0133090).

In regard to claim 24, Wang teaches a heat recovery system comprising a lighting assembly as claimed in claim 2, a heat exchanger 10 provided on a rear surface of the mounting 2 for carrying a heat exchange fluid, the heat exchanger having an inlet end for receiving the heat exchange fluid at a relatively low temperature and an outlet end for discharging the heat exchange fluid at a relatively high temperature [0017-0020], but lacks the explicit teaching of a heat exchanger tube.

Noh teaches a heat recovery system with a tube 3 for circulating a cooling liquid through the heat sink (figure 4) [0038-0065].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a tube for circulating the cooling liquid through the heat exchanger of Wang (as disclosed by Noh) in order to assure that the liquid does not leak and cause damage to the electrical components. One would have been motivated

to provide a tube for circulating liquid through the channels of Wang in order to provide a safer means for cooling the device, which decreases the risk of shock from liquid contacting the electrical components or and/or preserve the life of the electrical components by providing additional protection form the liquid.

In regard to claim 25, Wang teaches the heat exchanger tube is a U-shaped tube extending longitudinally of the mounting with the inlet and outlet end of the heat exchanger tube being disposed towards a common end of the mounting (see figures 3 and 4).

In regard to claim 26, Wang teaches that the rear surface of the mounting defines a channel 11 capable of receiving the heat exchanger tube.

In regard to claim 27, Wang teaches the invention described above, but lacks the teaching of the mounting further including a plurality of fins extending longitudinally and outwardly from the rear surface of the mounting.

Noh teaches a plurality of fins 4 extending longitudinally and outwardly from the rear surface of a mounting 2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add heat sink fins to the heat exchanger of Wang, as taught by Noh, in order to increase the area of heat dissipation thereby maximizing the amount of heat transferred from the light emitting device. One would have been motivated to add fins as disclosed by Noh in order to provide better heat dissipation for prolonged life of the light emitting devices.

In regard to claim 29, Wang teaches a thermally conductive mounting 2 having a rear surface (back side) and a mounting surface (bottom); a heat sink seat 10 having a front and rear surface, the heat sink seat being moveably mounted to the mounting surface; a light emitting device [0017] mounted to the front surface of the heat sink seat; and a heat exchanger provided on the rear surface of the mounting for carrying a heat exchange fluid, the heat exchanger having an inlet end for receiving the heat exchange fluid at a relatively low temperature and an outlet end for discharging the heat exchange fluid at a relatively high temperature[0017-0020], but lacks the explicit teaching of a heat exchanger tube.

Noh teaches a heat recovery system with a tube 3 for circulating a cooling liquid through the heat sink (figure 4) [0038-0065].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a tube for circulating the cooling liquid through the heat exchanger of Wang (as disclosed by Noh) in order to assure that the liquid does not leak and cause damage to the electrical components. One would have been motivated to provide a tube for circulating liquid through the channels of Wang in order to provide a safer means for cooling the device, which decreases the risk of shock from liquid contacting the electrical components or and/or preserve the life of the electrical components by providing additional protection from the liquid.

In regard to claim 30, Wang teaches the heat exchanger tube is a U-shaped tube extending longitudinally of the mounting with the inlet and outlet end of the heat



exchanger tube being disposed towards a common end of the mounting (see figures 3 and 4).

In regard to claim 31, Wang teaches a rear surface of the mounting defines a pair of spaced apart channels for receiving the U-shaped heat exchanger tube (figure 3).

In regard to claim 32, Wang teaches the invention described above as well as longitudinally extending fins 103 (figure 5) [0021].

It is noted that Noh also teaches a plurality of fins 4 extending longitudinally and outwardly from the rear surface of a mounting 2.

In regard to claim 34, Wang teaches fins 103 that define defining a plurality of channels 12 and 13 which are capable of receiving a heat exchanger tube.

In regard to claim 35, Wang teaches a plurality of heat exchanger channels (figures 3 and 4) provided on the rear surface of a mounting for carrying a heat exchange fluid, each heat exchanger channel having an inlet end for receiving the heat exchange fluid at a relatively low temperature and an outlet end for discharging the heat exchange fluid at a relatively high temperature [0017-0020], but lacks the teaching of heat exchanger tubes for circulating the fluid.

Noh teaches a heat recovery system with a tube 3 for circulating a cooling liquid through the heat sink (figure 4) [0038-0065].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a tube for circulating the cooling liquid through the heat exchanger of Wang (as disclosed by Noh) in order to assure that the liquid does not

leak and cause damage to the electrical components. One would have been motivated to provide a tube for circulating liquid through the channels of Wang in order to provide a safer means for cooling the device, which decreases the risk of shock from liquid contacting the electrical components or and/or preserve the life of the electrical components by providing additional protection from the liquid.

In regard to claim 36, Wang teaches an inlet chamber provided at and in fluid communication with the inlet end of the heat exchanger tubes, the inlet chamber 12 defining an opening for receiving heat exchange fluid at a relatively low temperature from a source of heat exchange fluid ; and an outlet chamber 13 provided at and in fluid communication with the outlet end of the heat exchanger tubes, the outlet chamber defining an opening for discharging heat exchange fluid at a relatively high temperature.

In regard to claim 37, Wang teaches that the light emitting device is a light emitting diode thermally coupled to the front surface of the heat sink seat [0008-0029].

In regard to claim 38, Wang teaches that the shape of the mounting surface corresponds to the shape of the rear surface of the heat sink seat (see figure 1).

#### ***Allowable Subject Matter***

Claims 5, 6, 8-20, 28, and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to show or teach in combination a lighting device as recited in claim 3, and further comprising the rear surface of the heat sink seat forming a convex

surface and the mounting surface forming a concave surface, and wherein the radius of said convex surface corresponds to the radius of said concave surface.

With regard to claims 6 and 8-20, they are dependent on objected claim 5 and would be allowable if claim 5 were amended into its independent form.

In regard to claims 28 and 33, the prior art fails to show or teach in combination a light device with heat recovery as recited in claims 27 and 32, which further comprises fins that are radially extending.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chang (2006/0203465) and Matsui (2003/0052584) teach relevant lighting devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JULIE A. SHALLENBERGER whose telephone number is (571)272-7131. The examiner can normally be reached on Monday - Friday 830-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon-Suk (James) Lee can be reached on 571-272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2885

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JAS

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/Anabel M Ton/

Primary Examiner, Art Unit 2875